Troubleshooting Guide

HP Business Desktops
dx5150 model

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This guide provides helpful hints and solutions for troubleshooting
the above products as well as scenarios for possible hardware and
software problems.

WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

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Computer Diagnostic Features

Diagnostics for Windows

The Diagnostics for Windows (DFW) utility allows you to view information about the hardware and software configuration of the computer while running Microsoft Windows XP. It also allows you to perform hardware and software tests on the subsystems of the computer.

When you invoke Diagnostics for Windows, the Overview screen is displayed, which shows the current configuration of the computer. From the Overview screen, there is access to several categories of information about the computer and the **Test** tab. The information in every screen of the utility can be saved to a file or printed.

✎ To test all subsystems, you must log in as the administrator. If you do not log in as the administrator, you will be unable to test some subsystems. The inability to test a subsystem will be indicated by an error message under the subsystem name in the Test window or by shaded check boxes that cannot be selected.

Use Diagnostics for Windows to determine if all the devices installed on the computer are recognized by the system and functioning properly. Running tests is optional but recommended after installing or connecting a new device.

Third party devices not supported by HP may not be detected by Diagnostics for Windows. Save, print, or display the information generated by the utility. You should run tests and have the printed report available before placing a call to the Customer Support Center.

Detecting Diagnostics for Windows

Some computers ship with the Diagnostics for Windows preloaded, but not preinstalled. You may have installed it earlier, along with other utilities, or it may have been installed by another user.

To determine whether Diagnostics for Windows is installed:

1. Access the location of the Diagnostics icons. In Windows XP Home or Windows XP Professional, select **Start > Control Panel**.

2. Look through the displayed icons in the Control Panel.

   ❏ If icons for Configuration Record and Diagnostics for Windows are included, the Diagnostics for Windows utility is installed.

   ❏ If icons for Configuration Record and Diagnostics for Windows are not included, the Diagnostics for Windows utility may be loaded, but not installed.

Installing Diagnostics for Windows

If Diagnostics for Windows is not preloaded, you can download the Diagnostics for Windows SoftPaq from the following Web site:

http://www.hp.com/support

The following operation is required only if the diagnostics program software has been loaded on the hard drive but not installed.

1. Close any Windows applications.

2. Install the Diagnostics for Windows utility:

   ❏ In Windows XP, select **Start > Setup Software** icon. Select **Diagnostics for Windows > Next** button, then follow the instructions on the screen.

   ❏ If the Setup Software icon is not on the Desktop or in the Start menu, run the Setup program from the **C:\CPQAPPS\DIAGS** directory or select **Start > Run** and type the following in the command line: **C:\CPQAPPS\DIAGS\SETUP**.

3. Click **Next** to install Diagnostics for Windows.

4. After the program has finished installing, you may be prompted to restart the computer, or it may automatically restart. If prompted, click **Finish** to restart the computer or **Cancel** to exit the program. You must restart the computer to complete the installation of Diagnostics for Windows.

✎ If you want to upgrade an existing version of Diagnostics for Windows installed on the computer, visit http://www.hp.com/support to locate and download the latest Diagnostics for Windows SoftPaq.

Using Categories in Diagnostics for Windows

To use the categories do the following:

1. Click **Start > HP Information Center > Diagnostics for Windows**. You can also select the **Diagnostics for Windows** icon, located in the Control Panel, by clicking **Start > Control Panel**, then select **Diagnostics for Windows**.

   The screen displays the overview of the computer hardware and software.

2. For specific hardware and software information, select a category from the **Categories** pull-down menu or the appropriate icon on the toolbar.

✎ As you move the cursor over the toolbar icons, the corresponding category name displays near the cursor.

3. To display more detailed information in a selected category, click **More** in the **Information Level** box in the lower left corner of the window or click **Level** at the top of the screen and select **More**.

4. Review, print, and/or save this information as needed.

✎ To print the information, click **File**, then select **Print**. Select one of the following options: **Detailed Report (All Categories)**, **Summary Report (All Categories)**, or **Current Category**. Click **OK** to print the report you selected.

✎ To save the information, click **File**, then select **Save As**. Select one of the following options: **Detailed Report (All Categories)**, **Summary Report (All Categories)**, or **Current Category**. Click **OK** to save the report you selected.

5. To exit Diagnostics for Windows, click **File**, and then click **Exit**.

Menu Bar—File, Categories, Navigation, Level, Tab, Help

At the top of the Diagnostics for Windows screen is the Menu Bar consisting of six pull-down menus:

- File—Save As, Print, Printer Setup, Exit

- Categories—See the list of categories in the following section

- Navigation—Previous Category (**F5**), Next Category (**F6**)

- Level—Less (**F7**), More (**F8**) <information on the screen>

- Tab—Overview, Test, Status, Log, Error

- Help—Contents, How to use Help, About

Tool Bar—Icons for Different Categories of Information

Below the Menu Bar, the Tool Bar contains a row of icons for each of the following categories of information about the computer:

- System—System board, ROM, date, and time information

- Asset Control—Asset tag, system serial number, and processor information

- Input Devices—Keyboard, mouse, and joystick(s) information

- Communication—Ports in system and information about each

- Storage—Storage drives in system and information about each

- Graphics—Graphics system information

- Memory—System board and Windows memory information

- Multimedia—Optical storage (CD, DVD, and so on) and audio information

- Windows—Windows information

- Architecture—PCI Device information

- Resources—IRQ, I/O, and Memory Map information

- Health—Status of system temperature and hard drives

- Miscellaneous—CMOS, DMI, BIOS, System, Product Name, and Serial Number

Tabs—Overview, Test, Status, Log, Error

Below the Tool Bar are five tabs:

■ Overview—The Overview window displays general overview information about the computer. This is the window that is displayed when you first start the utility. The left side of the window shows hardware information, and the right side of the window shows software information.

■ Test—The Test window allows you to choose various parts of the system to test. You can also choose the type of test and testing mode.

■ Status—The Status window displays the status of each test in progress. You can cancel testing by clicking the **Cancel Testing** button.

■ Log—The Log window displays a log of tests for each device.

■ Error—The Error window displays any errors that occurred during device testing. The window lists the device being tested, the type and number of errors, and the error code.

Running Diagnostic Tests in Diagnostics for Windows

To run diagnostic tests:

1. Click **Start > HP Information Center > Diagnostics for Windows**. You can also select the **Diagnostics for Windows** icon, located in the Control Panel, by clicking **Start > Control Panel**, then select **Diagnostics for Windows**.

   The screen displays the overview of the computer hardware and software. Five tabs are displayed below the row of icons: **Overview**, **Test**, **Status**, **Log**, and **Error**.

2. Click the **Test** tab, or click **Tab** at the top of the screen and select **Test**.

3. Select one of the following options:

   ❏ Quick Test—Runs a quick, general test on each device. Requires no user intervention if Unattended Mode is selected.

   ❏ Complete Test—Runs maximum testing of each device. The user can select Interactive Mode or Unattended Mode.

❏ Custom Test—Runs only the tests you select. To select specific devices or tests, find the device in the list, then select the check box beside each test. When selected, a red check mark is displayed in the box. Some tests selected may require user intervention.

✎ To test all subsystems, you must log in as the administrator. If you do not log in as the administrator, you will be unable to test some subsystems. The inability to test a subsystem will be indicated by an error message under the subsystem name in the Test window or by shaded boxes that cannot be checked.

4. Select **Interactive Mode** or **Unattended Mode**. In Interactive Mode, the diagnostic software will prompt you for input during tests that require it. Some tests require interaction and will display errors or halt testing if selected in conjunction with Unattended Mode.

❏ Interactive Mode provides maximum control over the testing process. You determine whether the test passed or failed and may be prompted to insert or remove devices.

❏ Unattended Mode does not display prompts. If errors are found, they are displayed when testing is complete.

5. Click the **Begin Testing** button at the bottom of the window. Test Status is displayed, showing the progress and result of each test. For more details on the tests run, click the **Log** tab or click **Tab** at the top of the screen and select **Log**.

6. To view a test report, select a tab:

❏ The **Status** tab summarizes the tests run, passed, and failed during the current testing session.

❏ The **Log** tab lists tests run on the system, the numbers of times each test has run, the number of errors found on each test, and the total run time of each test.

❏ The **Error** tab lists all errors found on the computer with their error codes.

7. To save a test report:

❏ Select the **Log** tab **Save** button to save a Log tab report.

❏ Select the **Error** tab **Save** button to save an Error tab report.

8. To print a test report:

❏ If the report is on the Log tab, select **File > Save As**, then print the file from the selected folder.

❏ If the report is on the Error tab, select the **Error** tab **Print** button.

9. If errors are found, click the **Error** tab to display more detailed information and recommended actions. By following the recommended actions, you may be able to solve some problems yourself.

10. Click **Print** or save the error information in case you need to contact an authorized dealer, reseller, or service provider for assistance.

11. To exit Diagnostics for Windows, click **File**, then click **Exit**.

Configuration Record

The Configuration Record utility is a windows-based information-gathering tool similar to other management tools. It gathers critical hardware and software information from various computer subsystems to give a complete view of the computer. Configuration Record provides a means for automatically identifying and comparing configuration changes, and has the ability to maintain a configuration history. The information can be saved as a history of multiple sessions.

This utility was developed to allow resolution of problems without taking the computer offline and to assist in maximizing the computer availability. The information obtained by the utility is useful in troubleshooting system problems, and streamlines the service process by enabling quick and easy identification of system configurations, which is the first step in resolving service cases.

The Configuration Record gathers information automatically on the hardware and operating system software to deliver a comprehensive view of the system. It gathers information on such items as the ROM, asset tag, processor, physical drives, PCI devices, memory, graphics, operating system version number, operating system parameters, and the operating system startup files and displays it. If the original *Base.log* file is present in the *cpqdiags* directory, the *Base.log* file is displayed next to the *Now.log* file in a split window with the differences between the two highlighted in the color red.

Installing Configuration Record

The Configuration Record is part of Diagnostics for Windows. Whenever you install Diagnostics for Windows, the Configuration Record is also installed.

Running Configuration Record

To run this program:

1. Click **Start > HP Information Center > Configuration Record**. You can also select the **Configuration Record** icon, located in the Control Panel, by clicking **Start > Control Panel**, then select **Configuration Record**.

✎ The Configuration Record utility has two view options: **Show Changed Items Only** and **Show All**. The default view is **Show Changed Items Only**, therefore all the text is displayed in the color red since it shows only the differences. Switching to **Show All** displays the complete, comprehensive view of the system.

2. The default view is **Show Changed Items Only**. To view all the information gathered by Configuration Record, click **View** at the top of the window and select **Show All**, or click the **Show All Items** icon.

3. To save the information in the left or right window, select **File > Save Window File** and then select **Left Window File** or **Right Window File**.

✎ Saving the configuration of the computer periodically allows the user to keep a history of the configuration. This history may be useful to your service provider if the system ever encounters a problem that needs debugging.

4. To exit Configuration Record, click **File**, then click **Exit**.

Protecting the Software

To protect software from loss or damage, you should keep a backup copy of all system software, applications, and related files stored on the hard drive. See the operating system or backup utility documentation for instructions on making backup copies of data files.

Restoring the Software

The Windows operating system and software can be restored to the original state that they were when you purchased the computer by using the *Restore Plus!* CD. See the documentation included with the *Restore Plus!* CD for complete instructions on using this feature.

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Troubleshooting Without Diagnostics

This chapter provides information on how to identify and correct minor problems, such as diskette drive, hard drive, optical drive, graphics, audio, memory, and software problems. If you encounter problems with the computer, refer to the tables in this chapter for probable causes and recommended solutions.

✎ For information on specific error messages that may appear on the screen during Power-On Self-Test (POST) at startup, refer to Appendix A, "POST Error Messages."

Safety and Comfort

⚠ **WARNING:** Misuse of the computer or failure to establish a safe and comfortable work environment may result in discomfort or serious injury. Refer to the *Safety & Comfort Guide* on the *Documentation CD* and available on the Web site at http://www.hp.com/ergo, for more information on choosing a workspace and creating a safe and comfortable work environment.

Before You Call for Technical Support

If you are having problems with the computer, try the appropriate solutions below to try to isolate the exact problem before calling for technical support.

■ Run the Diagnostics for Windows utility. Refer to Chapter 1, "Computer Diagnostic Features" for more information.

■ Check the Power LED on the front of the computer to see if it is flashing red. The flashing lights are error codes that will help you diagnose the problem. Refer to Appendix A, "POST Error Messages" for more information.

■ If the screen is blank, plug the monitor into a different video port on the computer if one is available. Or, change out the monitor with a monitor that you know is functioning properly.

■ If you are working on a network, plug another computer with a different cable into the network connection. There may be a problem with the network plug or cable.

■ If you recently added new hardware, remove the hardware and see if the computer functions properly.

■ If you recently installed new software, uninstall the software and see if the computer functions properly.

■ Boot the computer to the Safe Mode to see if it will boot without all of the drivers loaded. When booting the operating system, use "Last Known Configuration."

■ Refer to the comprehensive online technical support at http://www.hp.com/support.

■ Refer to the following "Helpful Hints" section in this guide.

■ Run the *Restore Plus!* CD.

$\bigtriangleup$ **CAUTION:** Running the *Restore Plus!* CD will erase all data on the hard drive.

To assist you in resolving problems online, HP Instant Support Professional Edition provides you with self-solve diagnostics. If you need to contact HP support, use HP Instant Support Professional Edition's online chat feature. Access HP Instant Support Professional Edition at: http://www.hp.com/go/ispe.

Access the Business Support Center (BSC) at http://www.hp.com/go/bizsupport for the latest online support information, software and drivers, proactive notification, and worldwide community of peers and HP experts.

If it becomes necessary to call for technical assistance, be prepared to do the following to ensure that your service call is handled properly:

■ Be in front of your computer when you call.

■ Write down the computer serial number and product ID number, and the monitor serial number before calling.

■ Spend time troubleshooting the problem with the service technician.

■ Remove any hardware that was recently added to your system.

■ Remove any software that was recently installed.

■ Run the *Restore Plus!* CD.

$\triangle$ **CAUTION:** Running the *Restore Plus!* CD will erase all data on the hard drive.

✎ For sales information and warranty upgrades (Care Packs), call your local authorized service provider or dealer.

Helpful Hints

If you encounter problems with the computer, monitor, or software, see the following list of general suggestions before taking further action:

■ Check that the computer and monitor are plugged into a working electrical outlet.

■ Check to see that the voltage select switch (some models) is set to the appropriate voltage for your region (115V or 230V).

■ Check to see that the computer is turned on and the green power light is on.

■ Check to see that the monitor is turned on and the green monitor light is on.

■ Check the Power LED on the front of the computer to see if it is flashing red. The flashing lights are error codes that will help you diagnose the problem. Refer to Appendix A, "POST Error Messages" for more information.

■ Turn up the brightness and contrast controls of the monitor if the monitor is dim.

■ Press and hold any key. If the system beeps, then the keyboard should be operating correctly.

■ Check all cable connections for loose connections or incorrect connections.

■ Wake the computer by pressing any key on the keyboard or pressing the power button. If the system remains in suspend mode, shut down the computer by pressing and holding the power button for at least four seconds then press the power button again to restart the computer. If the system will not shut down, unplug the power cord, wait a few seconds, then plug it in again. The computer will restart if automatic start on power loss is set in Computer Setup. If it does not restart, press the power button to start the computer.

■ Reconfigure the computer after installing a non–plug and play expansion board or other option. See "Solving Hardware Installation Problems" for instructions.

■ Be sure that all the needed device drivers have been installed. For example, if you are using a printer, you need a driver for that model printer.

■ Remove all bootable media (diskette, CD, or USB device) from the system before turning it on.

■ If you have installed an operating system other than the factory-installed operating system, check to be sure that it is supported on the system.

■ If the system has multiple video sources (embedded, PCI, or PCI-Express adapters) installed (embedded video on some models only) and a single monitor, the monitor must be plugged into the monitor connector on the source selected as the primary VGA adapter. During boot, the other monitor connectors are disabled and if the monitor is connected into these ports, the monitor will not function. You can select which source will be the default VGA source in Computer Setup.

CAUTION: When the computer is plugged into an AC power source, there is always voltage applied to the system board. You must disconnect the power cord from the power source before opening the computer to prevent system board or component damage.

Solving General Problems

You may be able to easily resolve the general problems described in this section. If a problem persists and you are unable to resolve it yourself or if you feel uncomfortable about performing the operation, contact an authorized dealer or reseller.

Solving General Problems

Problem	Cause	Solution
Computer appears locked up and will not turn off when the power button is pressed.	Software control of the power switch is not functional.	Press and hold the power button for at least four seconds until the computer turns off.
Computer will not respond to USB keyboard or mouse.	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.
	System has locked up.	Restart computer.

△ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose your unsaved data.

Problem	Cause	Solution
Computer date and time display is incorrect.	RTC (real-time clock) battery may need to be replaced. ✎ Connecting the computer to a live AC outlet prolongs the life of the RTC battery.	First, reset the date and time under **Control Panel** (Computer Setup can also be used to update the RTC date and time). If the problem persists, replace the RTC battery. See the *Hardware Reference Guide* on the *Documentation CD* for instructions on installing a new battery, or contact an authorized dealer or reseller for RTC battery replacement.
Devices connected to USB ports do not operate.	The Front Panel USB Port may be disabled in Computer Setup. This option controls the front USB port and the two USB ports on the back of the computer under the NIC connector.	Enable the Front Panel USB Port in Computer Setup. If the problem persists, contact an authorized service center.

Solving General Problems *(Continued)*

Problem	Cause	Solution
Cursor will not move using the arrow keys on the keypad.	The **Num Lock** key may be on.	Press the **Num Lock** key. The Num Lock light should not be on if you want to use the arrow keys. The **Num Lock** key can be disabled (or enabled) in Computer Setup.
Poor performance is experienced.	Processor is hot.	1. Make sure the airflow to the computer is not blocked. Leave a 4-inch (10.2-cm) clearance at the back of the system unit and above the monitor to permit the required airflow. 2. Make sure the fans are connected and working properly (some fans only operate when needed). 3. Make sure the processor heatsink is installed properly.
	Hard drive is full.	Transfer data from the hard drive to create more space on the hard drive.
	Low on memory.	Add more memory.
	Hard drive fragmented.	Defragment hard drive.
	Program previously accessed did not release reserved memory back to the system.	Restart the computer.
	Virus resident on the hard drive.	Run virus protection program.
	Too many applications running.	1. Close unnecessary applications to free up memory. 2. Add more memory.
	Cause unknown.	Restart the computer.

Solving General Problems *(Continued)*

Problem	Cause	Solution
Computer powered off automatically and the Power LED flashes Red two times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	Processor thermal protection activated: A fan may be blocked or not turning. OR The heatsink is not properly attached to the processor.	1. Ensure that the computer air vents are not blocked and the processor cooling fan is running. Leave a 4-inch (10.2-cm) clearance at the back of the system unit and above the monitor to permit the required airflow. 2. Open hood, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, then replace the processor fan. 4. Reseat processor heatsink and verify that the fan assembly is properly attached. 5. Contact an authorized reseller or service provider.

Solving General Problems *(Continued)*

Problem	Cause	Solution
System does not power on and the LEDs on the front of the computer are not flashing.	System unable to power on.	Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:

Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:

1. Check that the voltage selector, located on the rear of the power supply on some models, is set to the appropriate voltage. Proper voltage setting depends on your region.

2. Remove the expansion cards one at a time until the 5V_aux light on the system board turns on.

3. Replace the system board.

OR

Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then:

1. Check that the unit is plugged into a working AC outlet.

2. Open hood and check that the power button harness is properly connected to the system board.

3. Check that both power supply cables are properly connected to the system board.

4. Check to see if the 5V_aux light on the system board is turned on. If it is turned on, then replace the power button harness.

5. If the 5V_aux light on the system board is not turned on, then replace the power supply.

6. Replace the system board.

Solving Power Supply Problems

Common causes and solutions for power supply problems are listed in the following table.

Solving Power Supply Problems

Problem	Cause	Solution
Power supply shuts down intermittently.	Voltage selector switch on rear of computer chassis (some models) not switched to correct line voltage (115V or 230V).	Select the proper AC voltage using the selector switch.
	Power supply will not turn on because of internal power supply fault.	Contact an authorized service provider to replace the power supply.

Solving Power Supply Problems *(Continued)*

Problem	Cause	Solution
Computer powered off automatically and the Power LED flashes Red two times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	Processor thermal protection activated: A fan may be blocked or not turning. OR The heatsink is not properly attached to the processor.	1. Ensure that the computer air vents are not blocked and the processor cooling fan is running. Leave a 4-inch (10.2-cm) clearance at the back of the system unit and above the monitor to permit the required airflow. 2. Open hood, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, then replace the processor fan. 4. Reseat processor heatsink and verify that the fan assembly is properly attached. 5. Contact an authorized reseller or service provider.

Solving Power Supply Problems *(Continued)*

Problem	Cause	Solution
Power LED flashes Red four times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	Power failure (power supply is overloaded).	1. Check that the voltage selector, located on the rear of the power supply (some models), is set to the appropriate voltage. Proper voltage setting depends on your region. 2. Open the hood and ensure the 4-wire power supply cable is seated into the connector on the system board. 3. Check if a device is causing the problem by removing ALL attached devices (such as hard, diskette, or optical drives, and expansion cards). Power on the system. If the system enters the POST, then power off and replace one device at a time and repeat this procedure until failure occurs. Replace the device that is causing the failure. Continue adding devices one at a time to ensure all devices are functioning properly. 4. Contact an authorized service provider to replace the power supply. 5. Replace the system board.

Solving Diskette Problems

Common causes and solutions for diskette problems are listed in the following table.

✎ You may need to reconfigure the computer when you add or remove hardware, such as an additional diskette drive. See "Solving Hardware Installation Problems" for instructions.

Solving Diskette Problems

Problem	Cause	Solution
Diskette drive light stays on.	Diskette is damaged.	In Microsoft Windows XP, right-click **Start**, click **Explore**, and select a drive. Select **File > Properties > Tools**. Under **Error-checking**, click **Check Now**.
	Diskette is incorrectly inserted.	Remove diskette and reinsert.
	Drive cable is not properly connected.	Reconnect drive cable. Ensure that all four pins on the diskette power cable are connected to the drive.
Drive not found.	Cable is loose.	Reseat diskette drive data and power cable.
	Removable drive is not seated properly.	Reseat the drive.
Diskette drive cannot write to a diskette.	Diskette is not formatted.	Format the diskette. 1. From Windows Explorer select the disk **(A)** drive. 2. Right-click the drive letter and select **Format**. 3. Select the desired options, and click **Start** to begin formatting the diskette.
	Diskette is write-protected.	Use another diskette or remove the write protection.

Solving Diskette Problems *(Continued)*

Problem	Cause	Solution
Diskette drive cannot write to a diskette. *(continued)*	Writing to the wrong drive.	Check the drive letter in the path statement.
	Not enough space is left on the diskette.	1. Use another diskette. 2. Delete unneeded files from diskette.
	Diskette is damaged.	Replace the damaged disk.
Cannot format diskette.	Invalid media reported.	When formatting a disk in MS-DOS, you may need to specify diskette capacity. For example, to format a 1.44-MB diskette, type the following command at the MS-DOS prompt: **FORMAT A: /F:1440**
	Disk may be write-protected.	Open the locking device on the diskette.
A problem has occurred with a disk transaction.	The directory structure is bad, or there is a problem with a file.	In Windows XP, right-click **Start**, click **Explore**, and select a drive. **Select File > Properties > Tools**. Under **Error-checking**, click **Check Now**.
Diskette drive cannot read a diskette.	You are using the wrong diskette type for the drive type.	Check the type of drive that you are using and use the correct diskette type.
	You are reading the wrong drive.	Check the drive letter in the path statement.
	Diskette is damaged.	Replace the diskette with a new one.
"Invalid system disk" message is displayed.	A diskette that does not contain the system files needed to start the computer has been inserted in the drive.	When drive activity stops, remove the diskette and press the **Spacebar**. The computer should start up.
	Diskette error has occurred.	Restart the computer by pressing the power button.

Solving Diskette Problems *(Continued)*

Problem	Cause	Solution
Cannot Boot to Diskette.	Diskette is not bootable.	Replace with a bootable diskette.
	Diskette boot has been disabled in Computer Setup.	Enter Computer Setup and enable the diskette drive in **Integrated Peripherals > Onboard FDC Controller**.
	Network server mode is enabled in Computer Setup.	Enter Computer Setup and move the network interface card to the last position in **Advanced BIOS Features > Removable Device Priority**.

Solving Hard Drive Problems

Solving Hard Drive Problems

Problem	Cause	Solution
Hard drive error occurs.	Hard disk has bad sectors or has failed.	1. In Windows XP, right-click **Start**, click **Explore**, and select a drive. Select **File > Properties > Tools**. Under **Error-checking**, click **Check Now**.
		2. Use a utility to locate and block usage of bad sectors. If necessary, reformat the hard disk.
Disk transaction problem.	Either the directory structure is bad or there is a problem with a file.	In Windows XP, right-click **Start**, click **Explore**, and select a drive. Select **File > Properties > Tools**. Under **Error-checking**, click **Check Now**.
Drive not found (identified).	Cable could be loose.	Check cable connections.
	The system may not have automatically recognized a newly installed device.	See reconfiguration directions in the "Solving Hardware Installation Problems" section. If the system still does not recognize the new device, check to see if the device is listed within Computer Setup. If it is listed, the probable cause is a driver problem. If it is not listed, the probable cause is a hardware problem.
		If this is a newly installed drive, enter Computer Setup and disable the Quick Power On Self Test in **Advanced BIOS Features**.

Solving Hard Drive Problems *(Continued)*

Problem	Cause	Solution
Drive not found (identified). *(continued)*	Drive's controller is disabled in Computer Setup.	Enter Computer Setup and enable all the IDE and SATA controllers in **Integrated Peripherals > South OnChip IDE Device** and **Integrated Peripherals > South OnChip PCI Device**.
	Drive responds slowly immediately after power-up.	Enter Computer Setup and disable the Quick Power On Self Test in **Advanced BIOS Features**.
Nonsystem disk/NTLDR missing message.	The system is trying to start from a diskette that is not bootable.	Remove the diskette from the diskette drive.
	The system is trying to start from the hard drive but the hard drive may have been damaged.	1. Insert a bootable diskette into the diskette drive and restart the computer. 2. Check the hard drive format using fdisk: If NTFS formatting, use a third party reader to evaluate the drive. If FAT32 formatting, the hard drive cannot be accessed. Replace the MBR image.
	System files missing or not properly installed.	1. Insert a bootable diskette into the diskette drive and restart the computer. 2. Check the hard drive format using Fdisk: If NFTFS formatting, use a third party reader to evaluate the drive. If FAT32 formatting, the hard drive cannot be accessed. Replace the MBR image.

Solving Hard Drive Problems *(Continued)*

Problem	Cause	Solution
Nonsystem disk/NTLDR missing message. *(continued)*	Hard drive boot has been disabled in Computer Setup.	Enter Computer Setup and enable the hard drive in **Integrated Peripherals > South OnChip IDE Device > OnChip IDE Channel 0** *or* **1**. Or Enter Computer Setup and enable the hard drive in **Integrated Peripherals > South OnChip PCI Device > Onboard Chip SATA**.
	Bootable hard drive is not attached as first in a multi-hard drive configuration.	If attempting to boot from an IDE hard drive, ensure it is attached as Primary Device 0. If attempting to boot from a SATA hard drive, ensure it is attached to SATA 0.
Computer will not start.	Hard drive is damaged.	Observe if the front panel Power LED is blinking RED and if any beeps are heard. See Appendix A, "POST Error Messages" to determine possible causes for the blinking red and beep codes. See the Worldwide Limited Warranty for terms and conditions.
Computer seems to be locked up.	Program in use has stopped responding to commands.	Attempt the normal Windows "Shut Down" procedure. If this fails, press the power button for four or more seconds to turn off the power. To restart the computer, press the power button again.

Solving Display Problems

If you encounter display problems, see the documentation that came with the monitor and to the common causes and solutions listed in the following table.

Solving Display Problems

Problem	Cause	Solution
Blank screen (no video).	Monitor is not turned on and the monitor light is not on.	Turn on the monitor and check that the monitor light is on.
	Bad monitor.	Try a different monitor.
	The cable connections are not correct.	Check the cable connection from the monitor to the computer and to the electrical outlet.
	You may have a screen blanking utility installed or energy saver features are enabled.	Press any key or click the mouse button and, if set, type your password.
	System ROM is bad; system is running in FailSafe Boot Block mode (indicated by eight beeps).	Reflash the ROM using a ROMPaq diskette. See the "FailSafe Boot Block ROM" section of the *Desktop Management Guide* on the *Documentation CD* for more information.
	You are using a fixed-sync monitor and it will not sync at the resolution chosen.	Be sure that the monitor can accept the same horizontal scan rate as the resolution chosen.
	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.

△ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose your unsaved data.

Solving Display Problems *(Continued)*

Problem	Cause	Solution
Blank screen (no video). *(continued)*	Monitor cable is plugged into the wrong connector.	If the computer system has both an integrated graphics connector and an add-in graphics card connector, plug the monitor cable into the graphics card connector on the back of the computer.
	Monitor settings in the computer are not compatible with the monitor.	1. Restart the computer and press **F8** during startup when you see "Press F8" in the bottom right corner of the screen.
		2. Using the keyboard arrow keys, select **Enable VGA Mode** and press **Enter**.
		3. In Windows Control Panel, double-click the **Display** icon and select the **Settings** tab.
		4. Use the sliding control to reset the resolution.
Blank screen and the power LED flashes Red five times, once every second, followed by a two-second pause, and the computer beeps five times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	Pre-video memory error.	1. Reseat DIMMs. Power on the system.
		2. Replace DIMMs one at a time to isolate the faulty module.
		3. Replace third-party memory with HP memory.
		4. Replace the system board.

Solving Display Problems *(Continued)*

Problem	Cause	Solution
Blank screen and the power LED flashes Red six times, once every second, followed by a two-second pause, and the computer beeps six times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	Pre-video graphics error.	For systems with a graphics card: 1. Reseat the graphics card. Power on the system. 2. Replace the graphics card. 3. Replace the system board. For systems with integrated graphics, replace the system board.
Blank screen and the power LED flashes Red seven times, once every second, followed by a two-second pause, and the computer beeps seven times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	System board failure (ROM detected failure prior to video).	Replace the system board.
Monitor does not function properly when used with energy saver features.	Monitor without energy saver capabilities is being used with energy saver features enabled.	Disable monitor energy saver feature.
Dim characters.	The brightness and contrast controls are not set properly.	Adjust the monitor brightness and contrast controls.
	Cables are not properly connected.	Check that the graphics cable is securely connected to the graphics card and the monitor.
Blurry video or requested resolution cannot be set.	If the graphics controller was upgraded, the correct graphics drivers may not be loaded.	Install the video drivers included in the upgrade kit.

Solving Display Problems *(Continued)*

Problem	Cause	Solution
Blurry video or requested resolution cannot be set. *(continued)*	Monitor is not capable of displaying requested resolution.	Change requested resolution.
	Graphics card is bad.	Replace the graphics card.
The picture is broken up, rolls, jitters, or flashes.	The monitor connections may be incomplete or the monitor may be incorrectly adjusted.	1. Be sure the monitor cable is securely connected to the computer. 2. In a two-monitor system or if another monitor is in close proximity, be sure the monitors are not interfering with each other's electromagnetic field by moving them apart. 3. Fluorescent lights or fans may be too close to the monitor.
	Monitor needs to be degaussed.	Degauss the monitor. Refer to the documentation that came with the monitor for instructions.
Vibrating or rattling noise coming from inside a CRT monitor when powered on.	Monitor degaussing coil has been activated.	None. It is normal for the degaussing coil to be activated when the monitor is powered on.
Clicking noise coming from inside a CRT monitor.	Electronic relays have been activated inside the monitor.	None. It is normal for some monitors to make a clicking noise when turned on and off, when going in and out of standby mode, and when changing resolutions.
High pitched noise coming from inside a flat panel monitor.	Brightness and/or contrast settings are too high.	Lower brightness and/or contrast settings.

Solving Display Problems *(Continued)*

Problem	Cause	Solution
Fuzzy focus; streaking, ghosting, or shadowing effects; horizontal scrolling lines; faint vertical bars; or unable to center the picture on the screen. (flat panel monitors using an analog VGA input connection only)	Flat panel monitor's internal digital conversion circuits may be unable to correctly interpret the output synchronization of the graphics card.	1. Select the monitor's Auto-Adjustment option in the monitor's on-screen display menu. 2. Manually synchronize the Clock and Clock Phase on-screen display functions. To download a SoftPaq that will assist you with the synchronization, go to the following Web site, select the appropriate monitor, and download either SP20930 or SP22333: http://www.hp.com/support
	Graphics card is not seated properly or is bad.	1. Reseat the graphics card. 2. Replace the graphics card.
Certain typed symbols do not appear correct.	The font you are using does not support that particular symbol.	Use the Character Map to locate the and select the appropriate symbol. Click **Start > All Programs > Accessories > System Tools > Character Map**. You can copy the symbol from the Character Map into a document.

Solving Audio Problems

If the computer has audio features and you encounter audio problems, see the common causes and solutions listed in the following table.

Solving Audio Problems

Problem	Cause	Solution
Sound cuts in and out.	Processor resources are being used by other open applications.	Shut down all open processor-intensive applications.
	Direct sound latency, common in many media player applications.	In Windows XP: 1. From the **Control Panel**, select **Sounds and Audio Devices**. 2. On the **Audio** tab, select a device from the **Sound Playback** list. 3. Click the **Advanced** button and select the **Performance** tab. 4. Set the **Hardware acceleration** slider to **None** and the **Sample rate conversion quality** slider to **Good** and retest the audio. Set the **Hardware acceleration** slider to **Full** and the **Sample rate conversion quality** slider to **Best** and retest the audio.
Sound does not come out of the speaker or headphones.	Software volume control is turned down.	Double-click the **Speaker** icon on the taskbar, then make sure that Mute is not selected and use the volume slider to adjust the volume.
	Audio is hidden in Computer Setup.	Enable the audio in Computer Setup: **Integrated Peripherals > South OnChip PCI Device**.

Solving Audio Problems *(Continued)*

Problem	Cause	Solution
Sound does not come out of the speaker or headphones. *(continued)*	The external speakers are not turned on.	Turn on the external speakers.
	External speakers plugged into the wrong audio jack.	See the sound card documentation for proper speaker connection.
	Digital CD audio is not enabled.	Enable digital CD audio: 1. From the **Control Panel**, select **System**. 2. On the **Hardware** tab, click the **Device Manager** button. 3. Right-click on the CD/DVD device and select **Properties**. 4. On the **Properties** tab, make sure "**Enable digital CD audio for this CD-ROM device**" is checked.
	Headphones or devices connected to the line-out connector mute the internal speaker.	Turn on and use headphones or external speakers, if connected, or disconnect headphones or external speakers.
	Volume is muted.	1. From the **Control Panel** program, click **Sound, Speech and Audio Devices**, then click **Sounds and Audio Devices**. 2. Click the **Mute** check box to remove the check mark from the box.
	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.

⚠ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose your unsaved data.

Solving Audio Problems *(Continued)*

Problem	Cause	Solution
Noise or no sound comes out of the speakers or headphones.	Computer may not be detecting the correct speaker/headphone type or output or analog-to-digital auto-sense is not engaged.	1. If you are using digital speakers that have a stereo jack and want the system to auto-switch to digital, use a stereo-to-mono adapter to properly engage the auto-sense feature.
		2. If a stereo-to-mono adapter is not available, use the multimedia device properties to manually switch the audio signal from analog to digital.
		3. If the headphones have a mono jack, use the multimedia device properties to switch the system to analog out.
		For information on how to change the Audio **Output Mode**, see Appendix C, "Setting up Analog/Digital Audio Output."

✎ If you set digital as the **Output Mode**, the internal speaker and external analog speakers will no longer output audio until you switch back to an auto-sense or analog mode.

If you set analog as the **Output Mode**, external digital speakers will not function until you change the output mode back to an auto-sense or digital mode.

See Appendix C, "Setting up Analog/Digital Audio Output" for additional information.

Computer appears to be locked up while recording audio.	The hard disk may be full.	Before recording, make sure there is enough free space on the hard disk. You can also try recording the audio file in a compressed format.

Solving Printer Problems

If you encounter printer problems, see the documentation that came with the printer and to the common causes and solutions listed in the following table.

Solving Printer Problems

Problem	Cause	Solution
Printer will not print.	Printer is not turned on and online.	Turn the printer on and make sure it is online.
	The correct printer drivers for the application are not installed.	1. Install the correct printer driver for the application. 2. Try printing using the MS-DOS command: **DIR C:\ > [printer port]** where **[printer port]** is the address of the printer being used. If the printer works, reload the printer driver.
	If you are on a network, you may not have made the connection to the printer.	Make the proper network connections to the printer.
	Printer may have failed.	Run printer self-test.
Printer will not turn on.	The cables may not be connected properly.	Reconnect all cables and check the power cord and electrical outlet.
Printer prints garbled information.	The correct printer driver for the application is not installed.	Install the correct printer driver for the application.
	The cables may not be connected properly.	Reconnect all cables.
	Printer memory may be overloaded.	Reset the printer by turning it off for one minute, then turn it back on.
Printer is offline.	The printer may be out of paper.	Check the paper tray and refill it if it is empty. Select online.

Solving Keyboard and Mouse Problems

If you encounter keyboard or mouse problems, see the documentation that came with the equipment and to the common causes and solutions listed in the following table.

Solving Keyboard Problems

Problem	Cause	Solution
Keyboard commands and typing are not recognized by the computer.	Keyboard connector is not properly connected.	1. On the Windows Desktop, click **Start**. 2. Click **Shut Down**. The **Shut Down Windows** dialog box is displayed. 3. Select **Shut down**. 4. After the shutdown is complete, reconnect the keyboard to the back of the computer and restart the computer.
	Program in use has stopped responding to commands.	Shut down your computer using the mouse and then restart the computer.
	Keyboard needs repairs.	See the Worldwide Limited Warranty for terms and conditions.
	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.

△ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose your unsaved data.

Cursor will not move using the arrow keys on the keypad.	The **Num Lock** key may be on.	Press the **Num Lock** key. The Num Lock light should not be on if you want to use the arrow keys. The **Num Lock** key can be disabled (or enabled) in Computer Setup.

Solving Mouse Problems

Problem	Cause	Solution
Mouse does not respond to movement or is too slow.	Mouse connector is not properly plugged into the back of the computer.	Shut down the computer using the keyboard. 1. Press the **Ctrl** and **Esc** keys at the same time (or press the **Windows logo** key) to display the **Start** menu. 2. Use the up or down arrow key to select **Shut Down** and then press the **Enter** key. 3. Use the up or down arrow key to select the **Shut Down** option and then press the **Enter** key. 4. After the shutdown is complete, plug the mouse connector into the back of the computer (or the keyboard) and restart.
	Program in use has stopped responding to commands.	Shut down the computer using the keyboard then restart the computer.
	Mouse may need cleaning.	Remove the roller ball cover on the mouse and clean the internal components.
	Mouse may need replacement.	See the Worldwide Limited Warranty for terms and conditions.
	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.

△ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose your unsaved data.

Mouse will only move vertically, horizontally, or movement is jerky.	Mouse roller ball is dirty.	Remove roller ball cover from the bottom of the mouse and clean it with a mouse cleaning kit available from most computer stores.

Solving Hardware Installation Problems

You may need to reconfigure the computer when you add or remove hardware, such as an additional drive or expansion card. If you install a plug and play device, Windows XP automatically recognize the device and configure the computer. If you install a non–plug and play device, you must reconfigure the computer after completing installation of the new hardware. In Windows XP, use the **Add Hardware Wizard** and follow the instructions that appear on the screen.

Solving Hardware Installation Problems

Problem	Cause	Solution
A new device is not recognized as part of the system.	Device is not seated or connected properly.	Ensure that the device is properly and securely connected and that pins in the connector are not bent down.
	Cable(s) of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected and that pins in the cable or connector are not bent down.
	Power switch of new external device is not turned on.	Turn off the computer, turn on the external device, then turn on the computer to integrate the device with the computer system.
	When the system advised you of changes to the configuration, you did not accept them.	Reboot the computer and follow the instructions for accepting the changes.
	A plug and play board may not automatically configure when added if the default configuration conflicts with other devices.	Use Windows XP Device Manager to deselect the automatic settings for the board and choose a basic configuration that does not cause a resource conflict. You can also use Computer Setup to reconfigure or disable devices to resolve the resource conflict.

Solving Hardware Installation Problems *(Continued)*

Problem	Cause	Solution
Computer will not start.	Wrong memory modules were used in the upgrade or memory modules were installed in the wrong location.	1. Review the documentation that came with the system to determine if you are using the correct memory modules and to verify the proper installation. 2. Observe the beeps and LED lights on the front of the computer. See Appendix A, "POST Error Messages" to determine possible causes. 3. If you still cannot resolve the issue, contact Customer Support.
Power LED flashes Red five times, once every second, followed by a two-second pause, and the computer beeps five times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	Memory is installed incorrectly or is bad.	1. Reseat DIMMs. Power on the system. 2. Replace DIMMs one at a time to isolate the faulty module. 3. Replace third-party memory with HP memory. 4. Replace the system board.
Power LED flashes Red six times, once every second, followed by a two-second pause, and the computer beeps six times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	Video card is not seated properly or is bad, or system board is bad.	For systems with a graphics card: 1. Reseat the graphics card. Power on the system. 2. Replace the graphics card. 3. Replace the system board. For systems with integrated graphics, replace the system board.

Solving Hardware Installation Problems *(Continued)*

Problem	Cause	Solution
Power LED flashes Red ten times, once every second, followed by a two-second pause, and the computer beeps ten times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	Bad option card.	1. Check each option card by removing the cards one at time (if multiple cards), then power on the system to see if fault goes away. 2. Once bad card is identified, remove and replace bad option card. 3. Replace the system board.

Solving Network Problems

Some common causes and solutions for network problems are listed in the following table. These guidelines do not discuss the process of debugging the network cabling.

Solving Network Problems

Problem	Cause	Solution
Wake-on-LAN feature is not functioning.	Wake-on-LAN is not enabled.	Enable Wake-on-LAN. 1. Select **Start > Control Panel**. 2. Double-click **Network Connections**. 3. Double-click **Local Area Connection**. 4. Click **Properties**. 5. Click **Configure**. 6. Click the **Power Management** tab, then select the check box to **Allow this device to bring the computer out of standby**.
Network driver does not detect network controller.	Network controller is disabled.	1. Enter Computer Setup and enable network controller in **Integrated Peripherals > South OnChip PCI Device**. 2. Enable the network controller in the operating system via Device Manager.
	Incorrect network driver.	Check the network controller documentation for the correct driver or obtain the latest driver from the manufacturer's Web site.

Solving Network Problems *(Continued)*

Problem	Cause	Solution
Network status link light never flashes. ✎ The network status light is supposed to flash when there is network activity.	No active network is detected.	Check cabling and network equipment for proper connection.
	Network controller is not set up properly.	Check for the device status within Windows, such as Device Manager for driver load and the Network Connections applet within Windows for link status.
	Network controller is disabled.	1. Enter Computer Setup and enable network controller in **Integrated Peripherals > South OnChip PCI Device**. 2. Enable the network controller in the operating system via Device Manager.
	Network driver is not properly loaded.	Reinstall network drivers. See the *Network & Internet Communications Guide* on the *Documentation CD*.
	System cannot autosense the network.	Disable auto-sensing capabilities and force the system into the correct operating mode. See the *Network & Internet Communications Guide* on the *Documentation CD*.
Diagnostics reports a failure.	The cable is not securely connected.	Ensure that the cable is securely attached to the network connector and that the other end of the cable is securely attached to the correct device.
	The cable is attached to the incorrect connector.	Ensure that the cable is attached to the correct connector.
	There is a problem with the cable or a device at the other end of the cable.	Ensure that the cable and device at the other end are operating correctly.

Solving Network Problems *(Continued)*

Problem	Cause	Solution
Diagnostics reports a failure. *(continued)*	Network controller interrupt is shared with an expansion board.	Enter Computer Setup and change the resource settings for the board in **PnP/PCI Configurations > IRQ Resources**.
	The network controller is defective.	Contact an authorized service provider.
Diagnostics passes, but the computer does not communicate with the network.	Network drivers are not loaded, or driver parameters do not match current configuration.	Make sure the network drivers are loaded and that the driver parameters match the configuration of the network controller. Make sure the correct network client and protocol is installed.
	The network controller is not configured for this computer.	Select the **Network** icon in the **Control Panel** and configure the network controller.
Network controller stopped working when an expansion board was added to the computer.	Network controller interrupt is shared with an expansion board.	Enter Computer Setup and change the resource settings for the board in **PnP/PCI Configurations > IRQ Resources**.
	The network controller requires drivers.	Verify that the drivers were not accidentally deleted when the drivers for a new expansion board were installed.
	The expansion board installed is a network card (NIC) and conflicts with the embedded NIC.	Enter Computer Setup and change the resource settings for the board in **PnP/PCI Configurations > IRQ Resources**.
Network controller stops working without apparent cause.	The files containing the network drivers are corrupted.	Reinstall the network drivers, using the *Restore Plus!* CD.

Solving Network Problems *(Continued)*

Problem	Cause	Solution
Network controller stops working without apparent cause. *(continued)*	The cable is not securely connected.	Ensure that the cable is securely attached to the network connector and that the other end of the cable is securely attached to the correct device.
	The network controller is defective.	Contact an authorized service provider.
New network card will not boot.	New network card may be defective or may not meet industry-standard specifications.	Install a working, industry-standard NIC, or change the boot sequence to boot from another source.
Cannot connect to network server when attempting Remote System Installation.	The network controller is not configured properly.	Verify Network Connectivity, that a DHCP Server is present, and that the Remote System Installation Server contains the NIC drivers for your NIC.
System setup utility reports unprogrammed EEPROM.	Unprogrammed EEPROM.	Contact an authorized service provider.

Solving Memory Problems

If you encounter memory problems, some common causes and solutions are listed in the following table.

⚠ **CAUTION:** This system does not support ECC memory.

Solving Memory Problems

Problem	Cause	Solution
System will not boot or does not function properly after installing additional memory modules.	Memory module is not the correct type or speed grade for the system or the new memory module is not seated properly.	Replace module with the correct industry-standard device for the computer.
		On some models, ECC and non-ECC memory modules cannot be mixed.
Out of memory error.	Memory configuration may not be set up correctly.	Use the Device Manager to check memory configuration.
	You have run out of memory to run the application.	Check the application documentation to determine the memory requirements.
Memory count during POST is wrong.	The memory modules may not be installed correctly.	Check that the memory modules have been installed correctly and that proper modules are used.
	Integrated graphics may use system memory.	No action required.
Insufficient memory error during operation.	Too many Terminate and Stay Resident programs (TSRs) are installed.	Delete any TSRs that you do not need.
	You have run out of memory for the application.	Check the memory requirements for the application or add more memory to the computer.

Solving Memory Problems *(Continued)*

Problem	Cause	Solution
Power LED flashes Red five times, once every second, followed by a two-second pause, and the computer beeps five times. The beeps will repeat five times, but the Power LED will continue flashing until the problem is resolved.	Memory is installed incorrectly or is bad.	1. Reseat DIMMs. Power on the system. 2. Replace DIMMs one at a time to isolate the faulty module. 3. Replace third-party memory with HP memory. 4. Replace the system board.

Solving Processor Problems

If you encounter processor problems, common causes and solutions are listed in the following table.

Solving Processor Problems

Problem	Cause	Solution
Poor performance is experienced.	Processor is hot.	1. Make sure the airflow to the computer is not blocked. Leave a 4-inch (10.2-cm) clearance at the back of the system unit and above the monitor to permit the required airflow.
		2. Make sure the fans are connected and working properly (some fans only operate when needed).
		3. Make sure the processor heatsink is installed properly.
Power LED flashes Red three times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	Processor is not seated properly or not installed.	1. Check to see that the processor is present.
		2. Reseat the processor.

Solving CD-ROM and DVD Problems

If you encounter CD-ROM or DVD problems, see the common causes and solutions listed in the following table or to the documentation that came with the optional device.

Solving CD-ROM and DVD Problems

Problem	Cause	Solution
System will not boot from CD-ROM or DVD drive.	Removable Media Boot is disabled in the Computer Setup utility.	Enter Computer Setup and enable CD-ROM or DVD drive boot in **Integrated Peripherals > South OnChip IDE Device > OnChip IDE Channel 0** *or* **1**.
	Network Server Mode is enabled in Computer Setup.	Enter Computer Setup and move the network interface card to the last position in **Advanced BIOS Features > Removable Device Priority**.
	Non-bootable CD in drive.	Try a bootable CD in the drive.
	Boot order not correct.	Enter Computer Setup and change boot sequence in **Advanced BIOS Features** and **Advanced BIOS Features > Removable Device Priority**.
CD-ROM or DVD devices are not detected or driver is not loaded.	Drive is not connected properly or not properly configured.	See the documentation that came with the optional device.
Movie will not play in the DVD drive.	Movie may be regionalized for a different country.	See the documentation that came with the DVD drive.
	Decoder software is not installed.	Install decoder software.
	Damaged media.	Replace media.
	Movie rating locked out by parental lock.	Use DVD software to remove parental lock.

Solving CD-ROM and DVD Problems *(Continued)*

Problem	Cause	Solution
Movie will not play in the DVD drive. *(continued)*	Media installed upside down.	Reinstall media.
Cannot eject compact disc (tray-load unit).	Disc not properly seated in the drive.	Turn off the computer and insert a thin metal rod into the emergency eject hole and push firmly. Slowly pull the tray out from the drive until the tray is fully extended, then remove the disc.
CD-ROM, CD-RW, DVD-ROM, or DVD-R/RW drive cannot read a disc or takes too long to start.	Media has been inserted upside down.	Re-insert the Media with the label facing up.
	The DVD-ROM drive takes longer to start because it has to determine the type of media played, such as audio or video.	Wait at least 30 seconds to let the DVD-ROM drive determine the type of media being played. If the disc still does not start, read the other solutions listed for this topic.
	CD or DVD disc is dirty.	Clean CD or DVD with a CD cleaning kit, available from most computer stores.
	Windows does not detect the CD-ROM or DVD-ROM drive.	1. Use Device Manager to remove or uninstall the device in question. 2. Restart the computer and let Windows detect the CD or DVD driver.

Solving CD-ROM and DVD Problems *(Continued)*

Problem	Cause	Solution
Recording audio CDs is difficult or impossible.	Wrong or poor quality media type.	1. Try using a slower speed when recording.
		2. Verify that you are using the correct media for the drive.
		3. Try a different brand of media. Quality varies widely between manufacturers.

Solving Drive Key Problems

If you encounter Drive Key problems, common causes and solutions are listed in the following table.

Solving Drive Key Problems

Problem	Cause	Solution
Drive Key is not seen as a drive letter in Windows XP.	The drive letter after the last physical drive is not available.	Change the default drive letter for the Drive Key in Windows XP.
The computer boots to DOS after making a bootable Drive Key.	Drive Key is bootable.	Install the Drive Key only after the operating system boots.

Solving Internet Access Problems

If you encounter Internet access problems, consult your Internet Service Provider (ISP) or refer to the common causes and solutions listed in the following table.

Solving Internet Access Problems

Problem	Cause	Solution
Unable to connect to the Internet.	Internet Service Provider (ISP) account is not set up properly.	Verify Internet settings or contact your ISP for assistance.
	Modem is not set up properly.	Reconnect the modem. Verify the connections are correct using the quick setup documentation.
	Web browser is not set up properly.	Verify that the Web browser is installed and set up to work with your ISP.
	Cable/DSL modem is not plugged in.	Plug in cable/DSL modem. You should see a "power" LED light on the front of the cable/DSL modem.
	Cable/DSL service is not available or has been interrupted due to bad weather.	Try connecting to the Internet at a later time or contact your ISP. (If the cable/DSL service is connected, the "cable" LED light on the front of the cable/DSL modem will be on.)
	The CAT5 UTP cable is disconnected.	Connect the CAT5 UTP cable between the cable modem and the computers's RJ-45 connector. (If the connection is good, the "PC" LED light on the front of the cable/DSL modem will be on.)
	IP address is not configured properly.	Contact your ISP for the correct IP address.

Solving Internet Access Problems *(Continued)*

Problem	Cause	Solution
Unable to connect to the Internet. *(continued)*	Cookies are corrupted. (A "cookie" is a small piece of information that a Web server can store temporarily with your Web browser. This is useful for having your browser remember some specific information that the Web server can later retrieve.)	In Windows XP: 1. Select **Start > Control Panel**. 2. Double-click **Internet Options**. 3. On the **General** tab, click the **Delete Cookies** button.
Cannot automatically launch Internet programs.	You must log on to your ISP before some programs will start.	Log on to your ISP and launch the desired program.

Solving Internet Access Problems *(Continued)*

Problem	Cause	Solution
Internet takes too long to download Web sites.	Modem is not set up properly.	Verify that the correct modem speed and COM port are selected. In Windows XP: 1. Select **Start > Control Panel**. 2. Double-click **System**. 3. Click the **Hardware** tab. 4. In the Device Manager area, click the **Device Manager** button. 5. Double-click **Ports (COM & LPT)**. 6. Right-click the COM port your modem uses, then click **Properties**. 7. Under **Device status**, verify that the modem is working properly. 8. Under **Device usage**, verify the modem is enabled. 9. If there are further problems, click the **Troubleshoot** button and follow the on-screen instructions.

Solving Software Problems

Most software problems occur as a result of the following:

■ The application was not installed or configured correctly.

■ There is insufficient memory available to run the application.

■ There is a conflict between applications.

■ Be sure that all the needed device drivers have been installed.

■ If you have installed an operating system other than the factory-installed operating system, check to be sure it is supported on the system.

Where available, run the Configuration Record utility to determine if any changes have been made to the software which may be causing a problem. Refer to the "Configuration Record" section in this guide for more information.

If you encounter software problems, see the applicable solutions listed in the following table.

Solving Software Problems

Problem	Cause	Solution
Computer will not continue and no HP logo screen has appeared.	POST error has occurred.	Observe the beeps and LED lights on the front of the computer. See Appendix A, "POST Error Messages" to determine possible causes.
		See the Restore Kit or the Worldwide Limited Warranty for terms and conditions.
Computer will not continue after HP logo screen has appeared.	System files may be damaged.	Use recovery diskette to scan hard drive for errors.

Solving Software Problems *(Continued)*

Problem	Cause	Solution
"Illegal Operation has Occurred" error message is displayed.	Software being used is not Microsoft-certified for your version of Windows.	Verify that the software is certified by Microsoft for your version of Windows (see program packaging for this information).
	Configuration files are corrupt.	If possible, save all data, close all programs, and restart the computer.

Contacting Customer Support

For help and service, contact an authorized reseller or dealer. To locate a reseller or dealer near you, visit http://www.hp.com.

✎ If you take the computer to an authorized reseller, dealer, or service provider for service, remember to provide the setup and power-on passwords if they are set.

✎ Refer to the number listed in the warranty or in the *Support Telephone Numbers* guide on the *Documentation CD* for technical assistance.

A

POST Error Messages

This appendix lists the error codes, error messages, and the various indicator light and audible sequences that you may encounter during Power-On Self-Test (POST) or computer restart, the probable source of the problem, and steps you can take to resolve the error condition.

POST Message Disabled suppresses most system messages during POST, such as memory count and non-error text messages. If a POST error occurs, the screen will display the error message. To manually switch to the POST Messages Enabled mode during POST, press any key (except **F10** or **F12**). The default mode is POST Message Disabled.

The speed at which the computer loads the operating system and the extent to which it is tested are determined by the POST mode selection.

Quick Power-On Self Test is a fast startup process that does not run all of the system level tests, such as the memory test. Disabling this feature causes all of the ROM-based system tests to run and booting takes longer to complete.

✎ For more information on Computer Setup, see the *Computer Setup (F10) Utility Guide* on the *Documentation CD*.

POST Numeric Codes and Text Messages

This section covers those POST errors that have numeric codes associated with them. The section also includes some text messages that may be encountered during POST.

✎ The computer will beep once after a POST text message is displayed on the screen.

Numeric Codes and Text Messages

Code/Message	Probable Cause	Recommended Action
BIOS ROM checksum error–System halted	The checksum of the BIOS code in the BIOS chip is incorrect, indicating that the BIOS code may have become corrupt.	Contact your system dealer to replace the BIOS.
CMOS battery failed	The CMOS battery is no longer functional.	Contact your system dealer for a replacement battery.
CMOS checksum error—Defaults loaded	Checksum of CMOS is incorrect, so the system loads the default equipment configuration. A checksum error may indicate that CMOS has become corrupt. A weak battery may have caused this error.	Check the battery and replace, if necessary.
CPU at nnnn	Displays the running speed of the CPU.	None.
Press ESC to skip memory test		The user may press Esc. to skip the full memory test.
HARD DISK INSTALL FAILURE	Cannot find or initialize the hard drive controller or the drive.	Make sure the controller is installed correctly. If no hard drives are installed, be sure the Hard Drive selection in Setup is set to NONE.

Numeric Codes and Text Messages *(Continued)*

Code/Message	Probable Cause	Recommended Action
Keyboard error or no keyboard present	Cannot initialize the keyboard.	Make sure the keyboard is attached correctly and no keys are pressed during POST. To purposely configure the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.
Memory Test:	This message displays during a full memory test, counting down the memory areas being tested.	None.
Memory test fail	If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error.	Shut down the system, reseat the DIMMs, and reboot the system. If the problem persists, contact the system dealer for a replacement.
Override enabled– Defaults loaded	If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration with a set of BIOS defaults designed for the most stable, minimal-performance system.	None.
Error: Non-System disk or disk error Replace and press any key when ready	The BIOS was unable to find a suitable boot device. This may mean an unitialized or corrupt ATA flash.	Shut down the system, ensure that the power and data cables of all storage devices are plugged in properly, and reboot the system. If the problem persists, contact an authorized service center for assistance.

Numeric Codes and Text Messages *(Continued)*

Code/Message	Probable Cause	Recommended Action
Warning: CPU fan has failed.	CPU Fan weak (RPM < 1000) or not turning.	Ensure that the CPU fan power cable is connected. If the problem persists, contact an authorized service center for assistance.
Warning: System Fan has failed.	System Fan weak (RPM < 1000) or not turning.	Ensure that the System fan power cable is connected. If the problem persists, contact an authorized service center for assistance.
Memory is running at Single Channel Mode	When two same size memories are put in slot 1 and 3, this message will be displayed.	For optimal performance, shut down the system and move the second DIMM from the XMM3 to the XMM2 socket.

POST Diagnostic Front Panel LEDs and Audible Codes

This section covers the front panel LED codes as well as the audible codes that may occur before or during POST that do not necessarily have an error code or text message associated with them.

✎ If you see flashing LEDs on a PS/2 keyboard, look for flashing LEDs on the front panel of the computer and refer to the following table to determine the front panel LED codes.

Recommended actions in the following table are listed in the order in which they should be performed.

Diagnostic Front Panel LEDs and Audible Codes

Activity	Beeps	Possible Cause	Recommended Action
Green Power LED On.	None	Computer on.	None
Green Power LED flashes every two seconds. The Power LED will continue flashing until the problem is resolved.	None	Computer in Suspend to RAM mode (some models only) or normal Suspend mode.	None required. Press any key or move the mouse to wake the computer.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
Red Power LED flashes two times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	None	Processor thermal protection activated: A fan may be blocked or not turning. OR The heatsink/fan assembly is not properly attached to the processor.	1. Ensure that the computer air vents are not blocked and the processor cooling fan is running. Leave a 4-inch (10.2-cm) clearance at the back of the system unit and above the monitor to permit the required airflow. 2. Open hood, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, then replace processor fan. 4. Reseat processor heatsink and verify that the fan assembly is properly attached. 5. Contact an authorized reseller or service provider.
Red Power LED flashes three times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	None	Processor not installed (not an indicator of bad processor).	1. Check to see that the processor is present. 2. Reseat the processor.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
Red Power LED flashes four times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	None	Power failure (power supply is overloaded).	1. Open the hood and ensure the 4-wire power supply cable is seated into the connector on the system board.
			2. Check if a device is causing the problem by removing ALL attached devices (such as hard, diskette, or optical drives, and expansion cards). Power on the system. If the system enters the POST, then power off and replace one device at a time and repeat this procedure until failure occurs. Replace the device that is causing the failure. Continue adding devices one at a time to ensure all devices are functioning properly.
			3. Replace the power supply.
			4. Replace the system board.
Red Power LED flashes five times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	5	Pre-video memory error.	1. Reseat DIMMs. Power on the system.
			2. Replace DIMMs one at a time to isolate the faulty module.
			3. Replace third-party memory with HP memory.
			4. Replace the system board.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
Red Power LED flashes six times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	6	Pre-video graphics error.	For systems with a graphics card: 1. Reseat the graphics card. Power on the system. 2. Replace the graphics card. 3. Replace the system board. For systems with integrated graphics, replace the system board.
Red Power LED flashes seven times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	7	System board failure (ROM detected failure prior to video).	Replace the system board.
Red Power LED flashes eight times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	8	Invalid ROM based on bad checksum.	1. Reflash the ROM using a ROMPaq diskette. See the "ROM Flash" section of the *Desktop Management Guide* on the *Documentation CD*. 2. Replace the system board.
Red Power LED flashes nine times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	9 or None, depending on the issue	System powers on but is unable to boot.	1. Check that the voltage selector, located on the rear of the power supply (some models), is set to the appropriate voltage. Proper voltage setting depends on your region. 2. Replace the system board. 3. Replace the processor.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
Red Power LED flashes ten times, once every second, followed by a two-second pause. The Power LED will continue flashing until the problem is resolved.	10	Bad option card.	1. Check each graphics card by removing the card (one at a time if multiple cards), then power on the system to see if fault goes away. 2. Once a bad card is identified, remove and replace the bad option card. 3. Replace the system board.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
System does not power on and LEDs are not flashing.	None	System unable to power on.	Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:

Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:

1. Check that the voltage selector, located on the rear of the power supply, is set to the appropriate voltage. Proper voltage setting depends on your region.

2. Remove the expansion cards one at a time until the 5v_aux light on the system board turns on.

3. Replace the system board.

OR

Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then:

1. Check that the unit is plugged into a working AC outlet.

2. Open hood and check that the power button harness is properly connected to the system board.

3. Check that both power supply cables are properly connected to the system board.

4. Check to see if the 5v_aux light on the system board is turned on. If it is turned on, then replace the power button harness.

5. If the 5v_aux light on the system board is not turned on, then replace the power supply.

6. Replace the system board.

B

Password Security and Resetting CMOS

This computer supports security password features, which can be established through the Computer Setup Utilities menu.

This computer supports two security password features that are established through the Computer Setup Utilities menu: supervisor password and user password. When you establish only a supervisor password, any user can access all the information on the computer except Computer Setup. When you establish only a user password, the user password is required to access Computer Setup and any other information on the computer. When you establish both passwords, only the supervisor password will give you access to Computer Setup.

When both passwords are set, the supervisor password can also be used in place of the user password as an override to log in to the computer. This is a useful feature for a network administrator.

If you forget the password for the computer, there are two methods for clearing that password so you can gain access to the information on the computer:

■ Resetting the password jumper

■ Resetting CMOS using the Clear CMOS switch

$\triangle$ **CAUTION:** Sliding the CMOS switch will reset CMOS values to factory defaults and will erase any customized information including passwords, asset numbers, and special settings. It is important to back up the computer CMOS settings before resetting them in case they are needed later. See "Backing Up the CMOS" on page B-6 for more information.

Resetting the Password Jumper

To disable the user or supervisor password features, or to clear the user or supervisor passwords, complete the following steps:

1. Shut down the operating system properly, then turn off the computer and any external devices, and disconnect the power cord from the power outlet.

2. With the power cord disconnected, press the power button again to drain the system of any residual power.

⚠ **WARNING:** To reduce the risk of personal injury from electrical shock and/or hot surfaces, be sure to disconnect the power cord from the wall outlet, and allow the internal system components to cool before touching.

⚠ **CAUTION:** When the computer is plugged in, the power supply always has voltage applied to the system board even when the unit is turned off. Failure to disconnect the power cord can result in damage to the system.

⚠ **CAUTION:** Static electricity can damage the electronic components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. See the *Safety & Regulatory Information* guide on the *Documentation CD* for more information.

3. Remove the computer cover or access panel.

4. Locate the header and jumper.

✎ The password jumper is green so that it can be easily identified. For assistance locating the password jumper and other system board components, see the Illustrated Parts Map (IPM) for that particular system. The IPM can be downloaded from http://www.hp.com/support.

5. Remove the jumper from pins 1 and 2. Place the jumper on either pin 1 or 2, but not both, so that it does not get lost.

6. Replace the computer cover or access panel.

7. Reconnect the external equipment.

8. Plug in the computer and turn on power. Allow the operating system to start. This clears the current passwords and disables the password features.

9. To establish new passwords, repeat steps 1 through 4, replace the password jumper on pins 1 and 2, then repeat steps 6 through 8. Establish the new passwords in Computer Setup. Refer to the *Computer Setup (F10) Utility Guide* on the *Documentation CD* for Computer Setup instructions.

Clearing and Resetting the CMOS

The computer's configuration memory (CMOS) stores password information and information about the computer's configuration.

Using Computer Setup to Reset CMOS

✎ This is the preferred method of resetting CMOS. However, if you cannot access Computer Setup, refer to the next section for instructions on using the CMOS switch to reset CMOS.

To reset CMOS through Computer Setup, you must first access the Computer Setup Utilities menu.

1. Turn on or restart the computer. If you are in Microsoft Windows, click **Start > Shut Down > Restart.**

2. As soon as the computer is turned on, press and hold the **F10** key until you enter Computer Setup.

✎ If you do not press the **F10** key at the appropriate time, you must restart the computer and press and hold the **F10** key again to access the utility.

3. Use the arrow keys to select **Load Optimized Defaults**, then press **Enter**.

4. To apply and save changes, press **F10,** or select **Save & Exit Setup** and press **Enter**.

See the *Desktop Management Guide* on the *Documentation CD* for further instructions on reestablishing passwords. For instructions on Computer Setup, see the *Computer Setup (F10) Utility Guide* on the *Documentation CD*

Using the CMOS Switch to Reset CMOS

✎ Use this method to reset CMOS if you cannot access Computer Setup. If you can access Computer Setup, refer to the previous section for instructions on using Computer Setup to reset CMOS.

1. Turn off the computer and any external devices, and disconnect the power cord from the power outlet.

2. Disconnect the keyboard, monitor, and any other external equipment connected to the computer.

⚠ **WARNING:** To reduce the risk of personal injury from electrical shock and/or hot surfaces, be sure to disconnect the power cord from the wall outlet, and allow the internal system components to cool before touching.

⚠ **CAUTION:** When the computer is plugged in, the power supply always has voltage applied to the system board even when the unit is turned off. Failure to disconnect the power cord can result in damage to the system.

⚠ **CAUTION:** Static electricity can damage the electronic components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. See the *Safety & Regulatory Information* guide on the *Documentation CD* for more information.

3. Remove the computer cover or access panel.

⚠ **CAUTION:** Sliding the CMOS switch will reset CMOS values to factory defaults and will erase any customized information including passwords, asset numbers, and special settings. It is important to back up the computer CMOS settings before resetting them in case they are needed later. Back up is easily done through Computer Setup. See the *Computer Setup (F10) Utility Guide* on the *Documentation CD* for information on backing up the CMOS settings.

4. Slide the CMOS switch in the direction shown in the illustration below and hold for at least five seconds after the standby LED turns off. Five seconds are required to ensure that the CMOS has been completely cleared.

✎ Make sure you have disconnected the AC power cord from the wall outlet. The CMOS switch will not clear CMOS if the power cord is connected.
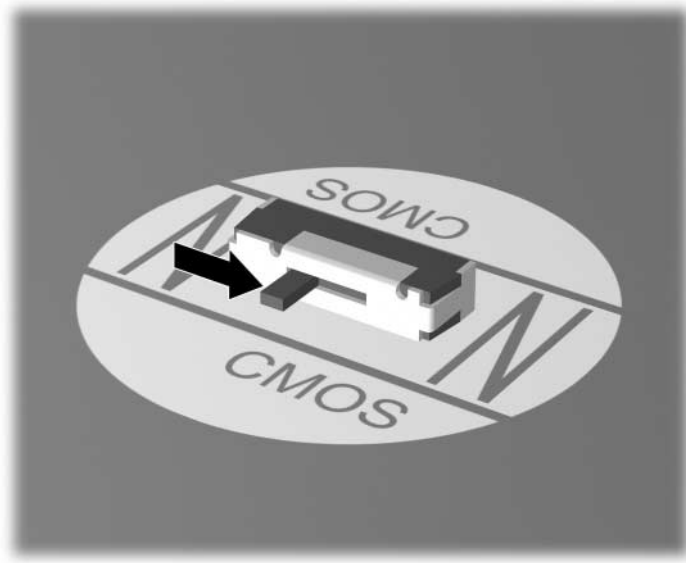
CMOS switch

✎ For assistance locating the CMOS switch and other system board components, see the Illustrated Parts Map (IPM) for that particular system.

5. Replace the computer cover or access panel.

6. Reconnect the external devices.

7. Plug in the computer and turn on power.

✎ You will receive POST error messages after clearing CMOS and rebooting advising you that configuration changes have occurred. Use Computer Setup to reset your passwords and any special system setups along with the date and time.

See the *Desktop Management Guide* on the *Documentation CD* for further instructions on reestablishing passwords. For instructions on Computer Setup, see the *Computer Setup (F10) Utility Guide* on the *Documentation CD*.

Backing Up the CMOS

Backing up is easily done. The CMOS Save/Load utility ROMPAQ can be found at http://www.hp.com under the support and drivers for the HP Business Desktop dx5150. Download the ROMPAQ files into a folder on a removable storage device (such as a DriveKey).

To back up the CMOS:

1. Make sure the computer to be backed up is turned on. Connect the removable storage to the computer.

2. In Windows, click **Start > Run**, type **CMD**, and click **OK** to open a DOS command window.

3. Type *N***:\folder\BIOS.exe SAVE:ABC001.DAT** (where *N* is the drive letter of the removable storage) to save the CMOS setting to the removable storage device.

4. Make sure the target computer is turned on. Connect the removable storage to the target computer.

5. In Windows, click **Start > Run**, type **CMD**, and click **OK**. to open a DOS command window.

6. Type *N***:\folder\BIOS.exe LOAD:ABC001.DAT** (where *N* is the drive letter of the removable storage) to load the custom CMOS setting onto the target system.

C
Setting up Analog/Digital Audio Output

Some computers may have an integrated audio solution that supports analog or digital external stereo speakers. These systems are capable of auto-sensing the speaker type and outputting the correct signal. To manually change between analog, digital, and auto-sense, complete the following set of procedures based on the operating system.

✎ If you set digital as the **Output Mode**, the internal speaker and external analog speakers will no longer output audio until you switch back to an auto-sense or analog mode. If you set analog as the **Output Mode**, external digital speakers will not function until you change the output mode back to an auto-sense or digital mode.

In Microsoft Windows XP:

1. Click **Start > Control Panel** and then double-click the **Sounds, Speech, and Audio Devices** icon.

2. Select the **Hardware** tab.

3. Highlight the appropriate audio device.

4. Click **Properties** to open up the **Device Properties** panel.

5. Click the **Properties** tab.

6. Click the "**+**" next to **Audio Devices** to expand it.

7. Highlight the appropriate driver by clicking it.

8. Click **Properties**.

9. Click **Settings**.

10. Change the **Output Mode** to the desired setting.

11. Click **OK** to close the **Properties** panel.

12. Close the **Control Panel**.

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